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ABSTRACT

Work-based learning (WBL) differs from work experiences gained in regular youth jobs because WBL is intentionally structured to promote learning by linking work with school. Five main purposes of WBL have been identified: enhancing students' motivation and academic achievement; increasing personal and social competence related to work in general; fostering a broad understanding of an occupation or industry; providing career exploration and planning; and imparting knowledge or skills related to employment in particular occupations or more generic work competencies. The key structural dimensions for delivering WBL are as follows: location (on campus or off); supervision (teachers or employers); time (during or after school hours); compensation (pay or school credit); and participation (individually or in groups). A recent study of students' WBL experiences outlined three aspects of the workplace learning environment that should be considered when assessing the quality of teaching and learning at work: types of tasks students perform and the social context in which those tasks are established, accomplished, and processed; influence of the community of practice (how it teaches students what they need to know and how it defines the student's role); and worksite pedagogy (the training philosophy and practices for promoting learning at work). (Contains 33 references) (MN)

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# centerpoint

what we've learned...where we're going

# Work-Based Learning for Students in High Schools and Community Colleges

CATHLEEN STASZ AND DAVID STERN

*I knew I wanted to work with people but I really wasn't sure what I wanted to do. And then I was able to go on an internship at an elementary school nearby and work with third graders, and through that experience I made my full decision that I wanted to be a teacher.*

—STUDENT FROM ROOSEVELT HIGH SCHOOL IN PORTLAND, OREGON[1]

Some students say they have found their true calling as a result of their work-based learning (WBL) experiences. Others say WBL helped them find out what sort of work they do not want. This kind of career exploration is one of several possible benefits WBL can offer students. In this *CenterPoint* we describe the range of potential benefits, and the means by which high schools and community colleges are trying to provide them.

WBL differs from work experiences gained in regular youth jobs because WBL is intentionally structured to promote learning by linking work with school. WBL is not new—cooperative education has been recognized by federal authority since the 1917 Smith-Hughes Act—but in the past it has been associated primarily with vocational education programs. Traditionally, co-op in high schools and community colleges has been an adjunct to vocational training that leads to employment in specific occupations. However, in the 1990s interest in other forms of WBL increased, and the expressed purposes of WBL became wider and more complex.

[1] Source: NCRVE fieldwork.

An example of a newer kind of WBL is Food from the 'Hood, a school-based enterprise at a Los Angeles high school, which began in 1993 as a community garden. Recently, the student-owners decided to create a product that they could successfully market on a wide scale, and Food from the 'Hood salad dressing was born. Student-owners learn the tasks associated with running the business—from weeding and watering the garden, to marketing, selling produce at local farmers' markets, and dealing with suppliers and customers. Learning can happen in many ways, but most of it is hands-on. In the office, for example, a new student learns to use the invoice system through one-on-one instruction by the program coordinator. Other students take a class in accounting from a volunteer mentor, a business professor at a local university. In these respects, Food from the 'Hood is similar to some school-based restaurants and other enterprises that have operated as part of traditional vocational education.

What distinguishes Food from the 'Hood from its traditional precursors is the explicit emphasis on academics, which take nearly as much of students' time and effort as the work itself. The office calendar posts both business-related events and SAT test dates. Volunteer mentors work closely with students to help them study for the SAT and to complete college applications. Student conversation is often about school, grades, classes, and college. And nearly all the student-owners go on to college, as compared to fewer than half of the students enrolled in the same high school.

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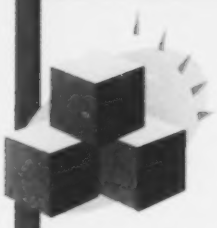

## Purposes of Work-Based Learning

**Five main purposes for WBL have been identified:**

**(1) enhancing students' motivation and academic achievement;**

**(2) increasing personal and social competence related to work in general;**

**(3) gaining a broad understanding of an occupation or industry;**

**(4) providing career exploration and planning; and**

**(5) acquiring knowledge or skill related to employment in particular occupations or more generic work competencies.**

In this *CenterPoint* we will illustrate recent WBL and explain some of its dimensions.[2] Three main sections explain:

- the range of purposes WBL may help students achieve;
- various ways of structuring WBL in relation to these purposes; and
- assessing the quality of teaching and learning in the context of work.

## Purposes of Work-Based Learning

The transformation of WBL from a component of traditional vocational education to an element of broader school reform is attributable to at least three factors: federal legislation (especially the 1990 Amendments to the Carl Perkins Act, and the School-to-Work Opportunities Act of 1994); research studies that found improvement in learning when situated in a context that lends it meaning and motivation; and changes in the nature of work which suggest a growing demand for continued learning and problem-solving in the workplace.

Five main purposes for WBL have been identified: (1) enhancing students' motivation and academic achievement; (2) increasing personal and social competence related to work in general; (3) gaining a broad understanding of an occupation or industry; (4) providing career exploration and planning; and (5) acquiring knowledge or skill related to employment in particular occupations or more generic work competencies (Urquiola et al., 1997, pp. 121–122).

How successfully WBL is accomplishing any or all of these purposes is a question. Nor should we necessarily expect that any single program would meet all the varied purposes described here. It is essential, therefore, that schools and colleges offering WBL programs try to keep track of whether it is accomplishing its purposes.

### Enhancing Academic Achievement and Motivation

Providing opportunities to apply academic knowledge to real work problems may enhance academic learning. Hamilton and Hamilton (1997) quote a math teacher who explained how his teaching had benefited from his awareness of students' work activities:

> When material can be made meaningful to their everyday life as it is in the workplace, it has some relevance. I had a couple of good examples this year where apprenticeships were a factor in my classroom instruction. . . . One was teaching standard deviation with a student who was doing very poorly in math. I was able to say, "Gee, I think we use standard deviation in the workplace. I wonder if someone could tell us what that means?" And sure enough [finger snap], it came to life and he explained exactly what a standard deviation was, why it was important to the statistical research of the company. . . . So that was application for the whole class. (p. 58)

Teaching academic concepts through WBL is not a new idea. In health-care occupations, clinical internship traditionally has been part of the curriculum. When Bragg, Hamm, and Trinkle (1995) surveyed community colleges around the country asking for exemplary WBL programs, most of the programs nominated were in the health field.

WBL also can strengthen students' motivation. For example, in a South Carolina high school where the curriculum has been organized into career clusters with extensive WBL,

> Students told of changes in their attitude toward school as a result of their participation in the Clusters. A self-described average student explained the motivation she found: "I never excelled in science, I never excelled in English, I never excelled in math. . . . I never found my thing. But

[2] This discussion is based on research conducted at NCRVE by ourselves and others. A partial list of publications is included in the list of references.

this, it really gave me a focus. I totally know what I want to do. . . . I'm not ignorant to the fact that I may change my mind because everyone changes their mind, but I think that I will stay in this general area and it really has given me assurance." She went on to imagine what her high school experience would have been without the opportunity to participate in a Cluster: "I would probably go through the basic classes and just do the routine." In actuality, she reported that before, "I was discouraged because I couldn't do well. Now I'm doing okay in the business and I'm striving—it's given me more self-esteem that I can do this, when I was falling behind in Chemistry and science." Her grades have improved to all A's and B's.

It may seem paradoxical that WBL and work-related curricula can increase students' desire for schooling, but this is not an uncommon finding. Apparently, students gain confidence in their ability to master school subjects when they connect academics to activities they understand and value.

### Increasing Personal and Social Competence Related to Work in General

WBL can also provide opportunities for students to develop a variety of personal and social skills. Some aspects of personal competence are initiative, honesty, commitment to continuous improvement, and career planning. A young woman who had recently graduated from a high school in Boston explained how the social skills she developed in her high school internship helped her get her present job.

> Basically, I wouldn't have a job if I didn't have my internship.... Where I come from, if you talk to me in the wrong way, I'm going to address you back in that same manner. I'm not going to be nice to you and try to get you to calm down or whatever.... But because I've worked, I've learned how to tolerate things, I've learned how to deal with people and their attitudes and I've learned how to, you know, thank people when they're nice to me, when they give me my forms on time, you know, things like that.

As personal and social dispositions become part of the curriculum, however, educators and program designers will have to face some difficult questions. One is whether WBL aims merely to adapt young people to jobs, or also to develop their capacity for creative and critical thinking about work. Obviously, an employer's interest sometimes conflicts with the interests of employees. The basic fact that employees' pay and benefits are costs to employers is a perpetual cause of conflict, though it may not be overt. Health and safety, the division of work responsibilities, and participation in decision making are other sources of conflict between employers and employees. One way or another, WBL designers and teachers have to deal with these possibly contentious issues.

### Gaining a Broad Understanding of an Occupation or Industry

WBL can also be designed to give students a broad understanding of an occupation or industry, in order to reduce the chance that students' skills will become obsolete.

Breadth can be accomplished in several ways. The school curriculum can teach "all aspects" of an industry, defined in federal law as including the following eight areas: planning, management, finance, technical and production skills, technology, labor issues, community issues, and health, safety, and environmental issues. In the workplace, students can learn about different aspects through work experiences. Breadth may be accomplished through job rotation, a practice often adopted by businesses for their own workforces. It can also be achieved by giving students special projects to accomplish at work.

Another approach to developing breadth is to bring together students as a group to reflect on their different work experiences. This was a feature of Experience-Based Career Education in the 1970s. Conventional co-op programs also include a related class where students discuss various aspects of their work—reflecting on their own experiences, and also hearing about other students' situations.

School-based enterprises have an advantage in exposing students to many aspects of the work because they can give students more room to experiment and make mistakes than

a non-school enterprise usually can do. For example, at Sebastian River High School in Sebastian, Florida,

> the school's restaurant provides hands-on experience in a school-based enterprise. The restaurant, Sharky's Cafe, is open to the public several days each week and for special breakfast and lunch events by local community organizations. Students are involved in every phase of the business.
>
> The Environmental Science Academy uses both school and state property to extend learning from the classroom to the outside world. There is a greenhouse and aquaculture project on campus, and the academy students are landscaping a section of the school grounds to support an outdoor teaching facility. In addition, the academy participates in a partnership with the local water management district. Students surveyed the habitat, inventoried species, designed nature trails, and devised a plan to allow public use of the land.

### Providing Career Exploration and Planning

The school-to-work movement of the 1990s arose in part from concern that young people in the United States often spend several years "floundering" in the labor market before they find steady, long-term jobs. Some amount of job search and exploration is necessary and beneficial, but bouncing aimlessly from one unrelated job to another, with periods of unemployment in between, can be frustrating and wasteful.

Many local programs now offer a WBL sequence for high school students that starts with brief job shadowing visits, and leads to longer experiences later. Based on observations in 1992–93, Pauly, Kopp, and Haimson (1995) noted,

> The widespread use of career exposure activities is particularly striking. Career academies, occupation-academic cluster programs, and restructured vocational programs have worked with employers to create career-exposure opportunities that appear to go far beyond those available to most high school students.
>
> Students use journals to record and reflect on their workplace experiences in some school-to-work programs. Since many young people have virtually no knowledge about the world of work, these career-exposure activities can widen their horizons dramatically—a particular benefit for students who have no vision of a productive future life. (pp. 139–140)

Students interviewed on the topic of their WBL experiences readily talk about career exploration and decision-making. The following excerpt comes from high school students in a small town in South Carolina.

> A Medical Science student shadowed an emergency room nurse, realizing that she was not meant for this high pressured and gory work when she passed out. She then began a shadowing experience with a Physical Therapist, first thinking she would just want to be an assistant. "He had a lot of paperwork," she explains. "I didn't want a lot of paperwork. . . . Then watching this Physical Therapist that I'm watching now, she has just set my mind that that's what I want to do. . . . You see different people every day. You do different routines with every person you do. So it's not a job I'm going to get bored with."

Some students say they have not yet settled on any particular kind of work, but their WBL placement has helped them clarify what they do not want. For instance, a student in Oakland declared, "At first when I joined the Media Academy I thought I wanted to go into broadcasting, but once I had my internships, I realized that's not what I want to do."

For older students advanced forms of school-supervised work experience can merge with and enhance the process of lifelong learning at work. For example, an elaborate structure for work-based career exploration and planning has developed at La Guardia Community College in New York City. Every full-time day student—including those majoring in Liberal Arts—is required to enroll in three 12-week internships or co-op placements, varying from 15 to 40 hours per week. Students become eligible for co-op after completing all the prerequisites for a major, at least one course in their major, and the co-op preparation course. Each student meets with a co-op faculty adviser to find an appropriate placement.

**Acquiring Knowledge or Skill for Particular Occupations or More Generic Work Competencies**

WBL provides opportunities to learn high-level technical skills on the job. Beginning work tasks might rely on more basic skills that can be learned in a relatively short time and which serve as building blocks for acquiring high-level skills. Technical competence can include mastering procedures, understanding fundamental principles, capacity for analytical judgment, and computer literacy. Ideally, students should come to understand that specific work skills comprise a foundation for continuous learning, not an end point.

Generally, worksites outside of school are better places than schools for students to experience the most up-to-date procedures and equipment, because competitive pressures force businesses to stay current, and schools seldom have sufficient budgets to stay up-to-date in all areas. However, two-year colleges, as the largest civilian providers of advanced vocational and technical education, offer various kinds of WBL to help students prepare for work in particular occupations or industries. This kind of WBL can be offered through traditional apprenticeship, new-style youth apprenticeship, tech prep, co-op, or clinical internship.

WBL can also be effective for learning more general work competencies, such as working in teams, communicating with coworkers and customers, and using the social context at work to solve problems and complete work tasks. The social characteristics of workplaces play an essential part in learning and working, but are difficult to replicate in a classroom setting. WBL may provide the best setting for learning general work competencies.

## Structures for Delivering WBL

The preceding examples illustrate that WBL can be organized in a variety of formats. The most common are:

- Paid work experience: students receive training in the context of a paid job off-campus. This is traditional in cooperative education, and is viewed as desirable in the School-to-Work Opportunities Act.
- Unpaid internship: students learn while they carry out productive responsibilities in a work setting outside of school, but they are not compensated. This is standard practice in certain industries, particularly health care.
- Service learning: community research or unpaid internship, usually in a government office or nonprofit agency, with primary focus on serving the community rather than building students' skills, though considerable learning may occur.
- Job shadowing or field studies: students visit worksites for the purpose of observing, but are not responsible for carrying out any of the work there, and are not paid.
- School-sponsored enterprise: students produce goods or services for other people, in connection with a school class or other school activity.

The choice of format depends on the purposes WBL is intended to serve. Here we highlight certain key structural dimensions, and how they are related to the various purposes of WBL: location (on-campus or off), supervision (teachers or employers), time (during or after school hours), compensation (pay or school credit), and participation (individually or in groups).

**Does WBL Take Place On-Campus or Off?**

If work is defined as activity that provides goods or services for other people, there are numerous on-campus student activities that qualify as work, and which therefore provide possible opportunities for work-based

### Structures for Delivering WBL

**Here we highlight certain key structural dimensions, and how they are related to the various purposes of WBL:**

**(1) location (on-campus or off),**

**(2) supervision (teachers or employers),**

**(3) time (during or after school hours),**

**(4) compensation (pay or school credit), and**

**(5) participation (individually or in groups).**

***If the purposes of WBL include more than improving students' academic achievement, other adults must also share the supervisory responsibility [with teachers].***

learning. Some students help out in school offices, cafeterias, or recycling centers, for example. Others work in school stores, banks, gardens, or child-care services. Many participate in school publications, musical performances, or dramatic productions—all of which provide benefits to other people.

Offering WBL on campus has some practical advantages. It avoids logistical problems such as travel cost and extra insurance. The school can have more control than in an off-campus setting. For instance, students can more easily be organized in groups, their activities can be more closely monitored, and their learning more easily assessed if it takes place at the school site. In addition, work placements off-campus are hard to find in some communities, and the only way to provide WBL for large numbers of students in such places may be for the school or college to organize enterprises of its own.

As shown in some of the preceding illustrations, several purposes of WBL may be more readily addressed through on-campus activities. Linking WBL to the academic curriculum may be easier because teachers are more likely to be in charge, and can therefore find the opportunities to apply and reinforce academic concepts. Teaching some generic work skills, such as teamwork, and helping students gain a broad understanding of an occupation or industry, also may be more readily accomplished in a school store, newspaper, or other school-based activity than in its off-campus counterpart. For instance, it is more feasible in an on-campus enterprise to give students a role in deciding what to produce, and what price to charge for any goods or services that are sold.

Other purposes, however, are more successfully addressed off-campus. Some knowledge or skill for employment in a particular occupation or industry can be obtained only by working in an off-campus business or agency, where technology and procedures are up to date. Some kinds of personal and social competence—for instance, communicating effectively with adult supervisors, co-workers, and customers—also can be learned only by actual experience with such adults in a workplace off-campus.

**Do Teachers Supervise WBL? Who Else?**

Teachers have special knowledge about the curriculum and how to work with students. To the extent that WBL is intended to improve students' academic achievement, participation by teachers is essential—including teachers of academic subjects like English, math, science, and social studies. Many of these teachers, however, have never worked anywhere other than a school. Therefore, a number of high schools and community colleges offering WBL for students have provided internships for teachers in local businesses, to give the teachers some first-hand knowledge of other worksites, and help them structure activities for students that bring out the academic content of work. Even if students' WBL takes place on campus, it is useful for the supervising teachers to know how similar work is done in non-school enterprises.

If the purposes of WBL include more than improving students' academic achievement, other adults must also share the supervisory responsibility. This shared responsibility is a defining feature of "cooperative" education—so named because teachers cooperate with students' worksite supervisors to plan, monitor, and evaluate students' performance. Job supervisors' participation has been essential because the main purpose of co-op has been for students to acquire skills and knowledge for employment in a particular industry or occupation, and job supervisors must be involved along with vocational teachers in defining and developing that know-how at a particular worksite. Their participation also seems important if the purposes of WBL broaden to include building students' generic work skills, personal and social competence, and broad understanding of an occupation or industry.

Just as some teachers lack knowledge about workplaces other than schools, some worksite supervisors lack knowledge about education. They may not know how to relate students' activities on the job to the school curriculum, or how to assess what students learn. Collaboration between schools and outside employers can therefore be enhanced

not only by teachers spending time in non-school worksites, but also by worksite supervisors becoming informed about the school curriculum.

### During or After School Hours?

Traditionally, some co-op programs have scheduled a part of students' work during the school day. However, using school time for WBL would be opposed by those who argue that the number one goal of high school or community college is to advance students' academic achievement, and that the use of regular school time for WBL therefore can be justified only to the extent that it accomplishes this primary purpose. For example, this line of reasoning would approve of a physics teacher assigning students to conduct an energy audit of a building as a laboratory exercise in the physics of heat or electricity. The primacy of the academic mission may also be considered consistent with the traditional practice of students producing school newspapers and rehearsing musical or dramatic performances as part of regularly scheduled classes, because writing, theater, and music are considered part of the academic curriculum.

In the 1990s many high schools have developed career academies, clusters, or majors that use work-related themes and applications to teach the academic curriculum, in an attempt to prepare students for both college and careers. WBL is often an integral part of these programs, including paid work experience or internships that may take as much as 10 or 20 hours a week for a year or more. Usually this work time is scheduled after school, partly for logistical reasons and partly to avoid taking too big a bite out of the school day.

But sometimes, as in traditional co-op, WBL for students in new college-and-career programs is scheduled during school hours. This may reflect confidence in the ability of WBL to improve academic learning. Or it may reflect willingness to devote school time to non-academic purposes, including career exploration, broad understanding of an industry or occupation, development of generic work skills, or preparation for immediate employment.

### Are Students Paid? Do They Receive Course Credit?

From students' point of view, a clear signal of the purposes of WBL is the type of reward they receive. If WBL takes place on a job for which students are paid by the employer, the emphasis is likely to be on acquiring knowledge and skill for that particular occupation or industry. Employers may also have some interest in developing students' personal and social competence, generic work skills, and broad understanding of the occupation or industry. But they are presumably less interested in paying for students' career exploration or academic learning.

School-based enterprises sometimes pay students in the form of scholarships at the time they graduate. This kind of payment provides an incentive for students to do the work, and signals that doing the work is important. But it indicates at the same time that the experience is also intended to enhance students' educational prospects.

Students may also receive course credit and grades for WBL. In traditional co-op, the credit is usually connected to a course in a vocational subject such as marketing. Unless this course is part of a combined academic-vocational sequence, the students' credit and grade for WBL would reflect acquisition of knowledge and skill related to employment in that field, and possibly also some generic work skills and understanding of the occupation or industry.

Except for classes like journalism, theater, and orchestra, it is not traditional for students to receive academic course credit or grades in connection with WBL. But this does happen in some new programs that combine academic and vocational curriculum in career academies, clusters, pathways, or other arrangements. For example, in such programs, students may be assigned to analyze an aspect of their internship experience, and receive credit in English, science, or social studies.

### Do Students Participate Individually or in Groups?

It is easier for a teacher or other supervisor to plan,

## Assessing the Quality of Teaching and Learning at Work

**A recent NCRVE study of students' WBL experiences outlined three aspects of the workplace learning environment:**

**(1) the types of tasks students perform and the social context in which these tasks are established, accomplished, and processed;**

**(2) the influence of the community of practice—how it goes about teaching students what they need to know and how it defines the student's role; and**

**(3) the worksite "pedagogy"—the training philosophy and practices for promoting learning at work.**

monitor, and evaluate students' WBL if a group of students are all doing the same thing. For example, a journalism class or a school store may have the same set of requirements for all participating students. Similarly, many schools engage students in career exploration by giving them all the same test designed to measure occupational interests.

To the extent that WBL involves students individually in different jobs, this kind of batch processing becomes more difficult. A teacher of math, social studies, or science could not count on students all applying a given concept in their various jobs. It would therefore take more time for the teacher to find work-related assignments for all students in the class. Assignments related to generic work skills or broad understanding of an occupation or industry would also have to be custom-made for each student, if the assignments are intended to draw on students' experience in different kinds of jobs.

## Assessing the Quality of Teaching and Learning at Work

In addition to considering what students are intended to learn from WBL, and the different ways to organize it, teachers and administrators are concerned with the quality of actual teaching and learning that takes place in the context of work. Evaluating WBL program quality means consciously looking at the workplace as a learning environment.

A recent NCRVE study of students' WBL experiences outlined three aspects of the workplace learning environment:

- the types of tasks students perform and the social context in which these tasks are established, accomplished, and processed;
- the influence of the community of practice—how it goes about teaching students what they need to know and how it defines the student's role; and
- the worksite "pedagogy"— the training philosophy and practices for promoting learning at work.

The study found that students' WBL experiences can vary widely, even within the same program. We illustrate some key differences with examples from three types of programs: a school-based enterprise (SBE), a transportation career academy (TCA), and a medical-magnet high school (MMHS).

### Characteristics of the Social Context

Presently, many WBL programs do little to prepare students for the social challenges of working. An appreciation of the social context of a workplace can illuminate those challenges and help program developers prepare students and select sites in ways that promote the program's learning goals. Insight into the social context of the work can also help educators better match students to work settings. We will discuss this point further when we discuss workplace pedagogy.

An important characteristic of the social context is whether an individual is highly supervised or has some discretion over work tasks. Greater discretion provides more opportunities to learn how to make decisions, organize one's work, and make use of the resources at hand; this greater independence is associated with job satisfaction. Students in a school-based enterprise had the most latitude in choosing work tasks and work times, while work in the other programs was more closely monitored and scheduled.

Sometimes there are good reasons for close monitoring. MMHS students, for example, worked on experiments in a university-based science laboratory. The design of the experiments dictated the order in which tasks had to be accomplished.

### Participating in a Community of Practice

When students go to work they enter a particular community of practice—a set of relations among people, activities, and their work setting over time. MMHS students, for example, entered a community of research scientists; TCA students entered a community of construction engineers or planners. As high school students, they were outsiders entering into an adult world. SBE students, by contrast, created their own unique community of practice, with guidance from adult supervisors and mentors. SBE students had more say in defining the rules for behavior or performance, while students in real work settings had to "learn the ropes."

TCA students fully participated in their work community: they attended staff meetings, were able to take advantage of company training opportunities, and were accepted as junior-level employees. MMHS students, however, were not seen as full members of the community: they were invited to social events but not to weekly meetings that dealt with the lab's program of research, and they had low status. Some co-workers ignored the students, and some even resented their presence.

### Pedagogy of Worksites

Differences in worksite pedagogy led to very different kinds of teaching and learning experiences. Training for TCA students followed a "just-in-time" approach: students were taught what they needed to know when the task required them to learn it. If a task required finding and copying dimensions from a blueprint, for example, a supervisor or co-worker would simply show the student how to read the blueprint and record the information. Then the supervisor would monitor the student as needed. For MMHS students, learning in the science lab followed more of an apprenticeship model, where teaching was embedded in nearly every activity and where individuals were expected to train and teach others. Their mentor had extensive teaching experience and even created a special curriculum tailored to the students' needs.

SBE advisors, also talented teachers, utilized an array of strategies to help students reach a variety of learning opportunities, including a talented mentor pool, outside conferences or workshops, free advice from experts, and opportunities to practice in a "fail-safe" environment. While training for TCA students was primarily geared to supporting productive work, the other sites provided training in support of other goals, such as raising students' academic skills.

Looking at WBL along these lines provides important information about the quality of a program. Asking the right kinds of questions can help program developers determine whether a work setting will provide opportunities for students to learn the kinds of skills or attitudes that they want them to learn.

- Will the job give students opportunities to take responsibility, make decisions, learn technical skills, or work in teams?
- Does the setting provide the social supports that students need to learn?
- Will students get adequate feedback on their performance to help them learn?
- Who teaches at work?
- Does the employer want workers who take initiative, or workers who take orders?

In addition to preparing students for the social challenges of working, gaining insight into the social context of the work can also help educators better match students to work settings. In settings where students are expected to do productive work, for example, they must adapt to just-in-time training and have the social skills to interact with others in ways that promote their learning (for example, asking questions or requesting help). Shy students, even if they are motivated, may have difficulties if learning on the job requires social assertiveness. In the absence of information about social context, program developers may rely on less relevant criteria, such as grades, interest, or availability of transportation.

School learning does not always instill an appropriate orientation toward learning at work. In order to learn on the job, students must interact in a social setting to learn their tasks with the goal of eventually carrying them out on their own. Students must know when to ask questions, have the confidence to

***To assess the quality of teaching and learning at work means teachers and administrators need to consciously look at the workplace as a learning environment.***

solve problems, and know how to work with others. For example, one MMHS student revealed a crucial difference between school and work in terms of what it meant for her to ask questions. At work,

> "She [the supervisor] told me to always look interested and alert . . . to ask questions even when I'm on my way to the library or passing by another lab. I try to think of questions [to ask], but sometimes they answer before I can ask."

At school, in contrast,

> "Listening works out in school because the teacher has too many students to answer all the questions. Not asking questions means you are listening to your teacher, not sleeping in the back of the class or talking to your friends."

Thus, to assess the quality of teaching and learning at work means teachers and administrators need to consciously look at the workplace as a learning environment. That is, each workplace setting needs to be evaluated as a community of practice with a defined social context and way of teaching.

## Research and Practice

As high schools and community colleges expand their use of work-based learning it is important to evaluate its contribution to students' overall educational experience. While some research has found positive results from participation in traditional co-op programs, other forms of WBL, which have been expanding and which are intended to achieve broader purposes, have not yet been thoroughly studied. Therefore, it is important to evaluate as we go. Schools and colleges should make sure to have some way of knowing whether WBL is accomplishing its desired purposes.

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